

REMARKS

This response is submitted in reply to the Official Action dated June 4, 2008 ("the Action"). It is noted with appreciation that the Examiner indicated in a telephone Interview with the undersigned attorney on June 9, 2008 that the Action is non-final.

Claims 1-26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,039,452 to McClane (McClane) in view of Gitelson et al. "Assessing Carotenoid Content in Plant Leaves with Reflectance Spectroscopy" Photochemistry and Photobiology, 2002, 75(3): 272-281 ("Gitelson") and in further view of U.S. Patent No. 6,014,214 to Li (Li).

Reconsideration of the above rejections is respectfully requested in view of the remarks that follow.

Independent Claim 1 recites a non-invasive *in vivo* method for assessing carotenoids in the retina and/or macula, including:

performing Optical Coherence Tomography (OCT) on a
retina of a subject; and
generating a spatial representation of carotenoid levels in
the retina based on data from the OCT of the retina.

The Action rejects Claims 1-26 as being unpatentable over McClane and in view of Gitelson and Li. McClane proposes Raman imaging of carotenoids and related chemical substances in macular pigments using monochromatic light sources. Gielson is cited as assessing carotenoid content in plant leaves using reflectance spectroscopy. The Action concedes that McClane and Gitelson do not use Optical Coherence Tomography (OCT) as recited in Claim 1; however, the Action cites Li as disclosing OCT in biological tissue, including the eye. Applicants submit that the cited art teaches away from the proposed combination for the reasons discussed below.

As discussed in Applicants' paper of February 18, 2008, OCT devices typically use a low coherent (i.e., polychromatic) light source. *See* Applicants' specification on page 7, lines 18-21. As also noted in Applicants' paper of February 18, 2008, the light source of McClane is a monochromatic light source, such as a low power solid state or argon ion laser. *See* McClane, col. 5, lines 31-34. McClane discusses that "the invention comprises obtaining a light source that generates light at a wavelength that produces a Raman response with a wavelength shift for one or more macular carotenoids." *See* McClane, col. 5, lines 3-6. The

scattered light includes inelastically scattered light having a plurality of Raman signals corresponding to one or more macular carotenoids. The elastically scattered light is filtered out and the inelastically scattered light is analyzed. *See* McClane, col. 5, lines 6-14. The light source in McClane is further described as a device for generating “nearly monochromatic light” at a wavelength that overlaps the absorption bands of the carotenoids of interest. *See* McClane, col. 5, lines 30-36.

Li discusses an OCT apparatus that is used in medical applications, including the human eye. Like conventional OCT techniques and in contrast to the monochromatic sources of McClane, Li uses a low coherence (i.e., polychromatic) light source. *See* col. 1, lines 12-20 (cited in the Action). Applicants submit that the low coherence or polychromatic light sources of the OCT techniques discussed in Li would destroy the stated purpose of the Raman imaging techniques in McClane because McClane selects monochromatic light at a wavelength that overlaps the absorption band of the carotenoids of interest to thereby generate a Raman image. Applicants further submit that the proposed combination of McClane and the polychromatic OCT techniques in Li would render the monochromatic light selection to generate Raman signals in the imaging techniques of McClane inoperable. Therefore, McClane teaches away from a combination with Li.

Gielson is cited as assessing carotenoid content in plant leaves using reflectance spectroscopy. As noted above, the Action concedes that Gielson does not disclose OCT imaging. Therefore, Gielson does not cure the deficiencies of McClane and Li.

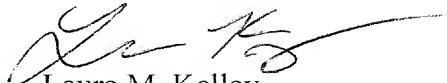
Accordingly, the cited references do not disclose or render obvious the recitations of Claim 1, and therefore, Claim 1 is patentable over the cited art. Claims 2-26 depend from Claim 1 and are patentable at least per the patentability of Claim 1. Applicants request that the rejections of such claims be withdrawn.

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Filed: February 5, 2004
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CONCLUSION

Accordingly, Applicants submit that the present application is in condition for allowance and the same is earnestly solicited.

Respectfully submitted,

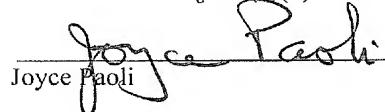


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